

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Withdrawn): A manufacturing method of a soft magnetic green compact comprising:

mixing a magnetic powder including an iron system powder and a mixed powder including a resin powder;

compressively molding the magnetic powder and the mixed powder in a mold by a powder metallurgic method in a mold to form a green compact; and

applying thermal treatment to the green compact;

wherein the resin powder includes a lubrication function and a binding function; and

wherein a composition amount of the resin powder is 0.10-3.00 weight percent relative to the total weight before the molding and is 0.01-0.50 weight percent relative to the total weight after the molding and the thermal treatment.

Claim 2 (Withdrawn) A manufacturing method of a soft magnetic green compact comprising:

mixing a magnetic powder formed by coating an insulation film on a surface of an iron system powder and a mixed powder including a resin powder;

compressively molding the magnetic powder and the mixed powder by a powder metallurgic method with a mold to form a green compact; and

applying thermal treatment to the green compact;

wherein the resin powder includes a lubrication function and a binding function; and
wherein

a composition amount of the resin powder is 0.10-3.00 weight percent relative to the total weight before the molding and is 0.01-0.50 weight percent relative to the total weight after the molding and the thermal treatment.

Claim 3 (Withdrawn): The manufacturing method of the soft magnetic green compact according to Claim 1, wherein the resin powder includes a polyamide system resin whose maximum particle diameter is equal to or smaller than 200 μ m.

Claim 4 (Withdrawn): A manufacturing method of a soft magnetic green compact comprising:

mixing a magnetic powder including an iron system powder and a mixed powder including a resin powder;

compressively molding the magnetic powder and the resin powder in a mold by a powder metallurgic method with a mold to form a green compact; and

applying thermal treatment on the green compact;

wherein the resin powder includes a lubrication function and a binding function; and

wherein the resin powder includes a polyamide system resin and a thermoplastic resin having a melting point equal to or higher than 200°C.

Claim 5 (Withdrawn): The manufacturing method of the soft magnetic green compact according to Claim 4, wherein a composition amount of the polyamide system resin and the thermoplastic resin having the melting point equal to or higher than 200°C is 0.10-3.00 weight percent relative to a total weight before the molding and is 0.01-0.80 weight percent relative to a total weight after the molding and the thermal treatment.

Claim 6 (Withdrawn): The manufacturing method of the soft magnetic green compact according to Claim 4, wherein the thermoplastic resin having the melting point equal to or higher than 200°C includes polyphenylene sulfide system resin.

Claim 7 (Withdrawn): The manufacturing method of the soft magnetic green compact according to Claim 1, wherein the thermal treatment is performed at 100-450°C.

Claim 8 (Withdrawn): The manufacturing method of the soft magnetic green compact according to Claim 1, wherein the green compact after the thermal treatment includes density of 6.6-7.4 g/cm³.

Claim 9 (Withdrawn): The manufacturing method of the soft magnetic green compact according to Claim 1, wherein the thermal treatment is performed at oxidizing ambient.

Claim 10 (Currently Amended): A soft magnetic green compact comprising:
a magnetic powder including an iron system powder; and
a mixed powder including a resin powder;
wherein:
the green compact is formed by compressively molding the magnetic powder and the mixed powder by a powder metallurgic method, and applying a thermal treatment;
the resin powder has a lubrication function and a binding function;
the resin powder is applied by the thermal treatment;
the resin powder is present in an amount of 0.01-0.50 weight percent relative to a total weight of the green compact after molding and thermal treatment; and

particles of the magnetic powder are directly bound to each other by oxidation caused by the thermal treatment.

Claim 11 (Currently Amended): A soft magnetic green compact comprising:

a magnetic powder including an iron system powder with an insulation coating; and
a mixed powder including a resin powder;

wherein:

the green compact is formed by compressingly molding the magnetic powder and the resin powder in a mold by a powder metallurgic method, and applying a thermal treatment;

the resin powder has a lubrication function and a binding function;

the resin powder is applied by the thermal treatment;

the resin powder is present in the green compact in an amount of 0.01-0.50 weight percent relative to a total weight of the green compact after molding and thermal treatment;
and

insulation coatings of the magnetic powder are bound to each other by oxidation caused by the thermal treatment.

Claim 12 (Original): The soft magnetic green compact according to Claim 10, wherein the resin powder includes a polyamide system resin whose maximum particle diameter is equal to or smaller than 200 μ m.

Claim 13 (Previously Presented): The soft magnetic green compact according to Claim 10, wherein the resin powder includes a polyamide system resin and a thermoplastic resin having a melting point equal to or higher than 200°C.

Claim 14 (Original): The soft magnetic green compact according to Claim 13, wherein the thermoplastic resin having the melting point equal to or higher than 200°C includes a polyphenylene sulfide system resin.

Claim 15 (Previously Presented): The soft magnetic green compact according to Claim 10, wherein the thermal treatment is performed at 100-450°C and at oxidizing ambient.

Claim 16 (Previously Presented): The manufacturing method of the soft magnetic green compact according to Claim 10, wherein the green compact has a density of 6.6-7.4 g/cm³ after thermal treatment.

Claim 17 (Canceled)

Claim 18 (Currently Amended): A soft magnetic green compact comprising:

a magnetic powder including an iron system powder; and

a resin powder;

wherein:

the green compact is formed by compressively molding the magnetic powder and the resin powder by a powder metallurgic method, and applying a thermal treatment;

the resin powder has a lubrication function and a binding function;

the resin powder is applied by the thermal treatment;

the resin powder is present in an amount of 0.01-0.50 weight percent relative to a total weight of the green compact after molding and thermal treatment; and

particles of the magnetic powder are directly bound to each other by oxidization.

Claim 19 (Currently Amended): A soft magnetic green compact comprising:
a magnetic powder including an iron system powder provided with an insulation film coating on a surface thereof; and
a resin powder;
wherein:
the green compact is formed by compressively molding the magnetic powder and the resin powder by a powder metallurgic method, and applying a thermal treatment;
the resin powder has a lubrication function and a binding function;
the resin powder is applied by the thermal treatment;
the resin powder is present in an amount of 0.01-0.50 weight percent relative to a total weight of the green compact after molding and thermal treatment; and
insulation film coatings of the magnetic powder are bound to each other by oxidization.

Claim 20 (Previously Presented): The soft magnetic green compact according to Claim 10, wherein the thermal treatment is performed at 250-450°C and at oxidizing ambient.

Claim 21 (Previously Presented): The soft magnetic green compact according to Claim 11, wherein the thermal treatment is performed at 250-450°C and at oxidizing ambient.

Claim 22 (Previously Presented): The soft magnetic green compact according to Claim 11, wherein the insulation film includes a phosphoric acid system film formed by phosphoric conversion treatment.

Claim 23 (Previously Presented): The soft magnetic green compact according to Claim 22, wherein the insulation film of the magnetic powder is bound by oxidization.

Claim 24 (Previously Presented): The soft magnetic green compact according to Claim 10, wherein the resin powder is present in an amount of 0.10-3.00 weight percent relative to the total weight before molding.

Claim 25 (Previously Presented): The soft magnetic green compact according to Claim 11, wherein the resin powder is present in an amount of 0.10-3.00 weight percent relative to the total weight before molding.

Claim 26 (Previously Presented): The soft magnetic green compact according to claim 10, wherein an insulation coating is formed on the iron system powder.

Claim 27 (Previously Presented): The soft magnetic green compact according to claim 18, wherein an insulation coating is formed on the iron system powder.

Claim 28 (Currently Amended): A soft magnetic green compact comprising:
a magnetic powder including an iron system powder with an insulation coating; and
a mixed powder including a resin powder;
wherein:
the green compact is formed by compressively molding the magnetic powder and the mixed powder by a powder metallurgic method, and applying a thermal treatment;
the resin powder has a lubrication function and a binding function;
the resin powder is applied by the thermal treatment;

the resin powder is present in an amount of 0.01-0.50 weight percent relative to a total weight of the green compact after molding and thermal treatment;

the insulation coating covers the iron system powder so that there is no mixed powder between the iron system powder and the insulation coating; and

particles of the magnetic powder are bound to each other by oxidization caused by the thermal treatment.

Claim 29 (Currently Amended): A soft magnetic green compact comprising:

a magnetic powder including an iron system powder with an insulation coating; and

a mixed powder including a resin powder;

wherein:

the green compact is formed by compressively molding the magnetic powder and the mixed powder by a powder metallurgic method, and applying a thermal treatment;

the resin powder has a lubrication function and a binding function;

the resin powder is applied by the thermal treatment;

the resin powder is present in an amount of 0.01-0.50 weight percent relative to a total weight of the green compact after molding and thermal treatment;

the insulation coating covers the iron system powder so that there is no mixed powder between the iron system powder and the insulation coating; and

particles of the magnetic powder are bound to each other by oxidization.

Claim 30 (Previously Presented): A soft magnetic green compact comprising:

a magnetic powder including an iron system powder with an insulation coating; and

a resin powder;

wherein:

the green compact is formed by compressively molding the magnetic powder and the resin powder by a powder metallurgic method, and applying a thermal treatment;

the resin powder has a lubrication function and a binding function;

the resin powder is applied by the thermal treatment;

the resin powder is present in an amount of 0.01-0.50 weight percent relative to a total weight of the green compact after molding and thermal treatment; and

particles of the magnetic powder are bound to each other by oxidization.

Claim 31 (Previously Presented): A soft magnetic green compact comprising:

a magnetic powder including an iron system powder with an insulation film coating on a surface thereof; and

a resin powder;

wherein:

the green compact is formed by compressively molding the magnetic powder and the resin powder by a powder metallurgic method, and applying a thermal treatment;

the resin powder has a lubrication function and a binding function;

the resin powder is applied by the thermal treatment;

the resin powder is present in an amount of 0.01-0.50 weight percent relative to a total weight of the green compact after molding and thermal treatment; and

particles of the magnetic powder are bound to each other by oxidization.

Claim 32 (Currently Amended): A soft magnetic green compact comprising:

a magnetic powder including an iron system powder; and

a resin powder;

wherein:

the green compact is formed by compressively molding the magnetic powder and the resin powder by a powder metallurgic method, and applying a thermal treatment;

the resin powder has a lubrication function and a binding function;

the resin powder is applied by the thermal treatment;

the resin powder is present in an amount of 0.010-3.00 weight percent relative to a total weight of the green compact before the molding and is present in an amount of 0.010-0.50 weight percent relative to the total weight of the green compact after molding and thermal treatment; and

particles of the magnetic powder are bound to each other by oxidization.

Claim 33 (Currently Amended): A soft magnetic green compact comprising:

a magnetic powder including an iron system powder with an insulation film coating on a surface thereof; and

a resin powder;

wherein:

the green compact is formed by compressively molding the magnetic powder and the resin powder by a powder metallurgic method, and applying a thermal treatment;

the resin powder has a lubrication function and a binding function;

the resin powder is applied by the thermal treatment;

the resin powder is present in an amount of 0.010-3.00 weight percent relative to a total weight of the green compact before the molding and is present in an amount of 0.010-0.50 weight percent relative to the total weight of the green compact after molding and thermal treatment; and

particles of the magnetic powder are bound to each other by oxidization.

Claim 34 (New): The soft magnetic green compact according to claim 10, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the mixed powder.

Claim 35 (New): The soft magnetic green compact according to claim 11, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the mixed powder.

Claim 36 (New): The soft magnetic green compact according to claim 18, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the resin powder.

Claim 37 (New): The soft magnetic green compact according to claim 19, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the resin powder.

Claim 38 (New): The soft magnetic green compact according to claim 28, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the mixed powder.

Claim 39 (New): The soft magnetic green compact according to claim 29, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the mixed powder.

Claim 40 (New): The soft magnetic green compact according to claim 30, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the resin powder.

Claim 41 (New): The soft magnetic green compact according to claim 31, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the resin powder.

Claim 42 (New): The soft magnetic green compact according to claim 32, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the resin powder.

Claim 43 (New): The soft magnetic green compact according to claim 33, wherein the resin powder is applied by the thermal treatment after compressively molding the magnetic powder and the resin powder.

Claim 44 (New): The soft magnetic green compact according to claim 10, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 45 (New): The soft magnetic green compact according to claim 11, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 46 (New): The soft magnetic green compact according to claim 18, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 47 (New): The soft magnetic green compact according to claim 19, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 48 (New): The soft magnetic green compact according to claim 28, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 49 (New): The soft magnetic green compact according to claim 29, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 50 (New): The soft magnetic green compact according to claim 30, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 51 (New): The soft magnetic green compact according to claim 31, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 52 (New): The soft magnetic green compact according to claim 32, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.

Claim 53 (New): The soft magnetic green compact according to claim 33, wherein the resin powder is applied by the thermal treatment to increase adhesiveness relative to the iron system powder.